

MSC Guidelines for Review of Diesel Engine Exhaust Systems -- Small Passenger Vessel

Procedure Number: E1-7T

Revision Date: 3/19/03

References

- a. Title 46 CFR 58.10
 - b. Title 46 CFR 182.430
 - c. American Boat and Yacht Council (ABYC), Project P-1
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Disclaimer

These guidelines were developed by the Marine Safety Center as an aid in the preparation and review of vessel plans and submissions. They were developed to supplement existing guidance. They are not intended to substitute or replace laws, regulations, or other official Coast Guard policy documents. The responsibility to demonstrate compliance with all applicable laws and regulations still rests with the plan submitter. The Coast Guard and the U. S. Department of Homeland Security expressly disclaim liability resulting from the use of this document.

Contact Information

If you have any questions or comments concerning this Guidance, please contact the Marine Safety Center by e-mail or phone. Please refer to Procedure Number: E1-7T.

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General Review Guidance

- ❑ Separate exhaust systems shall be provided for each engine.
 - ❑ The exhaust manifold shall be either water- jacketed and cooled by a discharge from a pump which operates at the same time as the engine operates. Alternatively, woodwork within nine inches of the of the engines shall be insulated. (58.10-5(c))
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❑ Wet Pipe Installations

- ❑ Pipes for wet exhaust systems shall be schedule 80 or corrosion resistant material.
 - ❑ Cooling water shall be injected into the exhaust pipe as near the engine as practicable
 - ❑ Terminus shall be arranged to prevent backflow of water from reaching the engine.
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- ☐ The section of pipe upstream of the water injection point shall be insulated.
 - ☐ If the exhaust cooling water overboard discharge can not be observed or the cooling water source is separate from that of the engines cooling water source, a cooling water low flow alarm or high exhaust temperature alarm shall be installed.
 - ☐ Dry Pipe Installations
 - ☐ Vertical dry exhaust pipes are permissible if the installation complies with 46 CFR 177.405(b) and 177.970.
 - ☐ Horizontal dry pipe installations must:
 - ☐ Not pass through living or berthing spaces.
 - ☐ Be installed so that the terminus is located above the deepest load waterline.
 - ☐ Be installed so that the terminus at the transom shall be located as far outboard as possible.
 - ☐ Be installed so that the terminus is arranged to prevent backflow of water from reaching the engine.
 - ☐ Be installed with all dry pipes insulated.
 - ☐ Have a means of arresting sparks.
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- ☐ Piping materials in systems with pressures in excess of 15 psi or which pass through living or berthing spaces are acceptable based on conformance with one of the following references:
 - ☐ Title 46 CFR 56.60
 - ☐ Sections I, III or VIII of the ASME Code
 - ☐ ABYC P-1
 - ☐ Flexible metallic hoses are acceptable for short runs where flexibility is required. Non-metallic flexible hoses with double clamps are acceptable for short runs in wet pipe systems.
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- ☐ Watertight integrity must be maintained where an exhaust pipe passes through a watertight bulkhead.. Noncombustible packing must be used in bulkhead penetrations for dry pipe systems.
 - ☐ Noncombustible hangers and blocks shall be used for support.
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